FOUR

TRAINING

4.1 BACKGROUND

Training related to 29 CFR 1910.120, "Hazardous Waste Operations and Emergency Response" (the HAZWOPER Standard), has a major impact at Department of Energy (DOE) sites. As training is one of the keys to worker safety, it represents a significant portion of the cost of implementation of the HAZWOPER Standard at some DOE sites.

This chapter provides the project manager with guidance for implementing training requirements in the HAZWOPER Standard as well as integrating them with requirements in other pertinent Occupational Safety and Health Administration (OSHA) Standards and applicable DOE rules and requirements. Together, these requirements provide the basis for the hazardous waste activity training program, which includes the following elements (see Figure 4-1):

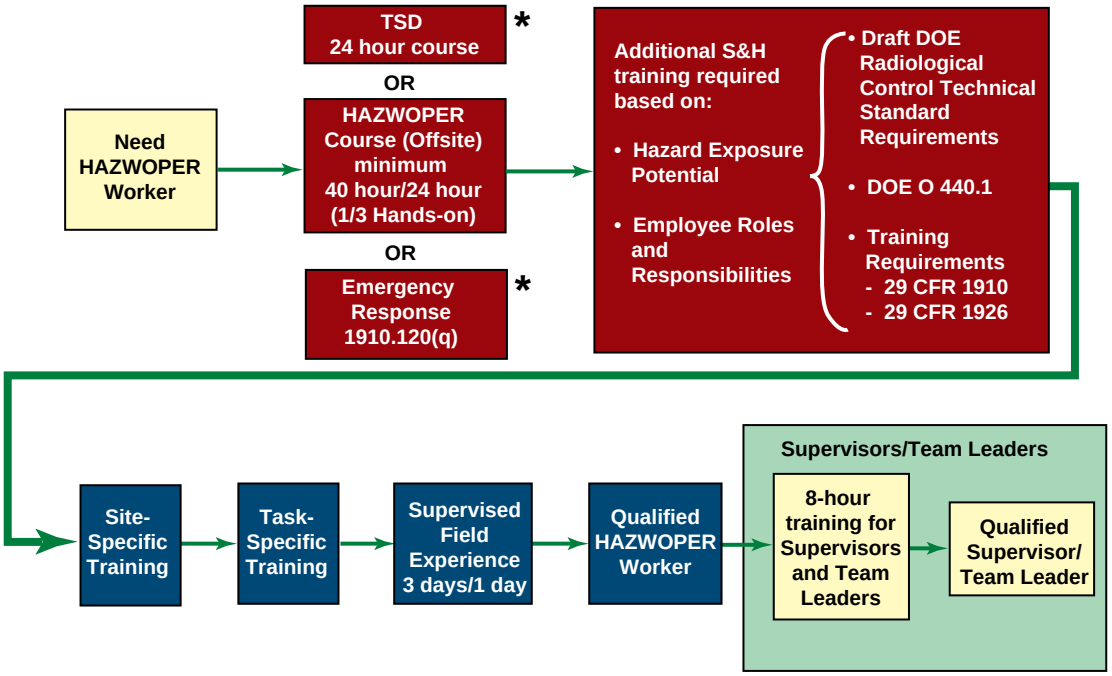
- Standardized learning objectives for the mandated 40-, 24-, and 8-hour courses (the 40- and 24-hour courses are often referred to as "HAZWOPER training");
- Standardized learning objectives for the mandated emergency response training;
- Course reciprocity and equivalency;
- Instructor and trainer qualifications;
- Student testing and evaluation;
- Recordkeeping requirements; and
- Needs analysis.

Value of HAZWOPER Training

- Helps to minimize accidents and injuries;
- Enables workers to recognize health and safety hazards;
- Promotes safe avoidance or escape from emergencies;
- Prepares workers or offsite personnel to respond to and control emergencies;
- Improves worker morale;
- Increases productivity;
- Reduces worker's compensation costs; and
- Facilitates OSHA compliance.

Required training under the HAZWOPER Standard reflects competency as well as the number of hours of instruction. Depending on the nature of the work, the hazards and possibility of worker exposures, and the roles and responsibilities of individual workers, additional training is likely to be required. See Tables 4-1 and 4-2.

An innovative and properly managed training program results in significant cost savings. In fiscal year 1994, the Oak Ridge Y-12 Plant used a well-documented equivalency approach (see Section 4.4) to emergency response training for firefighters to save over $25,000. Likewise, the Oak Ridge National Laboratory (ORNL) saved over $150,000 by using computer-based training and interactive video disks, equivalencies, and standardized procedures.



* Supervised field experience and 8-hour supervisor training not required

Figure 4-1. Site Worker Training Flow Diagram

4.2 TRAINING APPROACHES

A comprehensive, integrated health and safety training program is a key element in providing a cost-effective means of meeting the training requirements in the HAZWOPER Standard. It must cover all applicable OSHA and DOE requirements for personnel at DOE hazardous waste sites including workers, supervisors, managers, and visitors. For a HAZWOPER site or a deactivation and decontamination and dismantlement (D&D) site, the health and safety plan (HASP) and program define site-specific training requirements for each activity or task.

Essential Elements of An Occupational Safety and Health (OSH) Training Program

- Needs Analysis
- Training Administration
- Learning Objectives Development
- Training Lesson Plan Development and Maintenance
- Instructor Qualification
- Training Evaluation and Assessment
- Communication of Changes in Site-Specific Processes, Conditions, Hazards, and Materials
- Training Plan
- Training Requirements and Exemptions
- Regular Refresher Training
- Instructional Method Selection
- Tracking and Reporting System
- Remedial or Skills Enhancement Training or Both

Table 4-1. HAZWOPER (See Chapter 2) Training Categories

	General Site Worker (40-hour)	General Site Worker (24-hour)	Occasional Site Worker	Treatment, Storage, and Disposal (TSD) Worker	Emergency Response Training	Personnel in Support Zone	Visitors
Applicability	Personnel covered under the scope of HAZWOPER who are exposed to hazardous wastes or substances or safety and health hazards from hazardous waste operations	Personnel covered under the scope of HAZWOPER who regularly work in monitored and fully characterized areas with potential exposures below the published permissible exposure limits (PELs)	Personnel covered under the scope of HAZWOPER who are periodically onsite for specific and limited tasks and who are unlikely to encounter exposures over the published PELs	Personnel covered under the scope of HAZWOPER working at TSD facilities	Personnel covered under the scope of HAZWOPER working at uncontrolled hazardous waste worksites (29 CFR 1910.120 [e]), at TSD facilities permitted by the Resource Conservation and Recovery Act (RCRA) (29 CFR 1910.120 [p]), or who are responsible for responding to hazardous material incidents (29 CFR 1910.120 [q])	Personnel covered under the scope of HAZWOPER working in the support zone who do not enter the exclusion zone or contamination reduction zone	Non-essential personnel who are observing the worksite for a short duration (i.e., less than 8 hours) who are not exposed to safety and health hazards
Required Training	40-hour HAZWOPER training 3 days of supervised field experience Worksite-specific training Task-specific training General employee Training (GET)	24-hour HAZWOPER training 1 day of supervised field experience (recommended) Worksite-specific training Task-specific training GET	24-hour HAZWOPER training 1 day of supervised field experience An escort can substitute for the requirement for supervised field experience for short-duration tasks (i.e., less than 1 day) Worksite-specific training, as applicable Task-specific training, as applicable GET, as applicable	24-hour TSD training 1 day of supervised field experience (recommended) Worksite-specific training Task-specific training GET	For hazardous waste worksites, read 29 CFR 1910.120 (l) and for TSDs, read 29 CFR 1910.120 (p)(8) For (q) only, see Appendix 4-B First responder awareness level First responder operations level Hazardous materials technician Hazardous materials specialists On-scene incident commander Skilled support personnel Specialist employee	GET Emergency plan training Other safety and health training based on potential hazards, and exposures such as ergonomics, noise, etc.	Site-specific hazard communication training; visitors are escorted by trained personnel at all times

Table 4-2. Supplemental Training for HAZWOPER Activities

	Safety and Health Training	Worksite-Specific Training	Task-Specific Training	Supervised Field Experience	Training for Team Leaders, Supervisors, and Managers	Refresher Training
Basis	The need for additional safety and health training is based on the following: • Actual and potential hazards at a particular site • Actual and potential exposures incurred by individual employees • Roles and responsibilities of individual employees • Other applicable training requirements	Personnel must complete worksite-specific training before assuming their duties at the worksite.	Personnel must complete task-specific training before assuming their duties at the worksite. Content and scope of training must be based on the following: • Requirements and procedures to control work-place hazards, including emer-gency response • Level of actual and potential exposure to hazards • DOE safety and health requirements	Personnel must complete supervised field experience requirements based on the following: • HAZWOPER training category • Roles and responsibilities of individual employees	Onsite supervisors and managers directly responsible for personnel engaged in HAZWOPER activities must complete the same level of training as that required for their subordinates. Onsite supervisors and managers must complete at least 8 hours of additional specialized training.**	General site workers, occasional workers, TSD workers, supervisors, and managers must complete annual refresher training as follows: • Within 30 days of its due date • When returning to HAZWOPER activities within 1-3* years of initial training [Note: If more than 3 years have passed, initial training must be repeated.]

*For employees who have not performed hazardous waste work for more than 1 year, training beyond that provided in an 8-hour refresher might be needed. The employer makes a determination of training need based upon job hazards, employee roles and responsibilities, and employee's training retention (based upon observation, testing, and so forth).

**Does not apply to supervisors and managers of TSD workers.

DOE recommends the use of a "systematic approach to training," in which the content and rigor of training are commensurate with the potential hazards, exposures, worker roles and responsibilities, and requirements (see Figure 4-2). Numerous DOE Orders and guidance documents discuss the systematic approach to training in greater detail (e.g., the training accreditation program [TAP] manuals, the *OSHTRIG Manual*, and the draft *Occupational Safety and Health Training Program Management Guide* DOE/EH-0422).

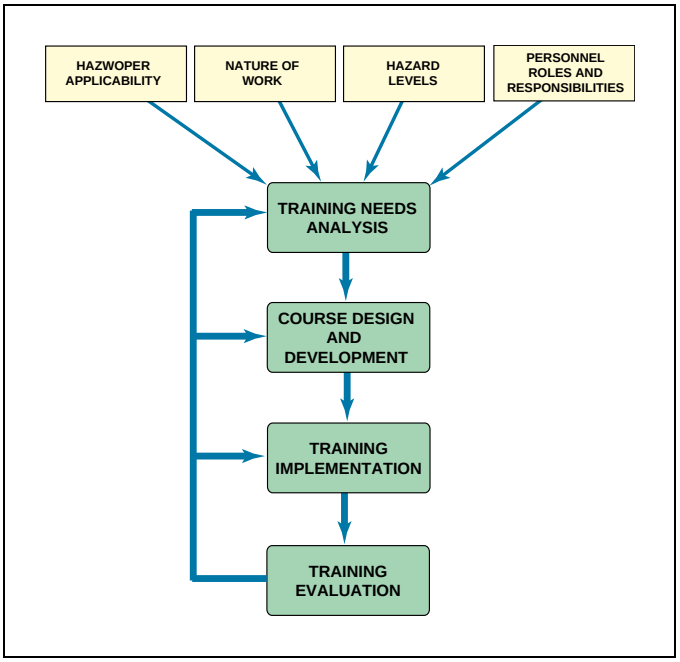


Figure 4-2. Systematic Approach to Training

Training for other activities such as deactivation and D&D may not fall within the strict scope of the HAZWOPER Standard. In many cases, however, applying HAZWOPER principles according to a hazard-based approach would add value to these activities (see Example 4-1). These activities often involve hazard-abatement processes, such as chemical lab-packing; asbestos, lead, mercury, or beryllium abatement; and radiological decontamination. Safety hazards may also involve, but are not limited to, issues related to construction safety, confined-space entry, lockout/tagout, hoisting and rigging, and use of elevated platforms or forklifts. Training requirements should be based on the hazards of the activity.

Training requirements are minimized by controlling exposure (or access) to hazardous wastes or substances. For example, an aisle through a hazardous waste site can be cleaned for an electrician who repairs equipment used in the exclusion zone. As long as there is no reasonable possibility of exposure to health or safety hazards associated with HAZWOPER waste operations, HAZWOPER training is not required for the electrician. Other safety training, such as in electrical safety, however, would be required. An escort for the electrician would be required. Refer to example 2-2 in Chapter 2.

Example 4-1

Once the appropriate training requirements are defined, they are identified in the HASP and safety and health program. Training informs workers about task-specific hazards and helps them develop the capability to recognize and control those hazards.

4.3 GENERAL TRAINING REQUIREMENTS AND GUIDELINES

The HAZWOPER Standard paragraphs (e) and (p) specify training requirements for employees who may be exposed to health and safety hazards at cleanup sites and Resource Conservation and Recovery Act of 1976 (RCRA) TSD facilities, respectively. Paragraph (q) specifies training requirements for employees who participate in emergency responses at locations other than cleanup sites and RCRA TSD facilities.

29 CFR 1910.121, "OSHA Accreditation of Training Programs for Hazardous Waste Operations" (proposed) and the nonmandatory Appendix E to the HAZWOPER Standard, "Suggested Training Curriculum Guidelines," are recommended for DOE-wide implementation. A compilation of combined curricula from the HAZWOPER Standard for accrediting training courses (29 CFR 1910.121); 29 CFR 1910.120, Appendix E (nonmandatory); and DOE-EM-STD-5503-94, "Environmental Management (EM) Health and Safety Plan Guidelines," is presented in Table 4-3.

Table 4-3. Combined EM Health and Safety Plan Guidelines and HAZWOPER 29 CFR 1910.120 and 29 CFR 1910.121 (Proposed) Training Curricula

TOPIC	40-hr	24-hr	16-hr	TSD 24-hr	TOPIC	40-hr	24-hr	16-hr	TSD 24-hr
HAZWOPER elements and safety program	●	●		●	Risks from handling radioactive wastes	●		●	
Effects of chemical exposures	●	●	●	●	Handling of shock-sensitive wastes	●		●	
Effects of biological and radiological exposures	●		†	●	Laboratory waste pack handling	●		●	
Fire and explosion hazards	●	●		●	Container sampling and safeguards	●		●	
General safety hazards	●	●	●	●	Procedures for shipping and transport	●		●	
Confined space, tank, and vault hazards	●		†	●	Decontamination program and procedures	●	●	●	●
Persons responsible for site health and safety	●		●		Emergency response and first aid	●	●		●
Health and safety hazards	●	†	†		Safe illumination levels	●		●	
PPE program and use of PPE	●	●		○	Site sanitation procedures and equipment	●		●	
Work practices for risk reduction	●	●		●	Review HAZWOPER appendixes	●		●	●
Engineering controls, risk reduction	●	●		●	Overview of hazard communication standard	●		●	●
Medical surveillance program	●	●		●	Use of reference materials	●	●	●	●
Site Health and Safety Plan	●	●			Toxicology principles and biological monitoring	●		●	●
Use of monitoring equipment	●	●			Employee rights and responsibilities	●		●	R
Site informational program	●		●		Hands-on exercises and demonstrations	●	●	†	●
Drum and container handling/spill containment	●		●	S	Final examination	●	●	●	●
Material handling equipment	●		●	●	Employee training program				●

† - Areas not required by 29 CFR 1910.121 (proposed), but needed to ensure 100 percent coverage from 24-hour course to 16-hour supplemental course;
○ - Overview; **S** - Spill containment; **R** - Resource Conservation and Recovery Act

the Worksite-specific scenarios and hands-on use of equipment should be included as much as possible in HAZWOPER training (recommended minimum of one-third of course hours). Worksite-specific examples should be used in all courses. Likewise, any discussion of hazards includes site-specific hazards. Special consideration is warranted for providing practical, hands-on training for emergency responders; emergency response training typically involves practice drills and demonstrations. The state fire marshal or authority having jurisdiction should be consulted to make certain that HAZWOPER and DOE training requirements for emergency response encompass any State- or community-specific training requirements.

HAZWOPER Training Certification

Initial HAZWOPER training certification depends on two criteria: (1) the successful completion of a 40- or 24-hour training course; and (2) completion of the specified level of supervised field experience. The employer is responsible for ensuring that both requirements are met before **final** certification is granted.

4.4 SPECIFIC TRAINING GUIDELINES

NEEDS ANALYSIS

Prior to beginning any training activity, exact training needs are identified. Training needs vary based on hazards, potential exposures, work requirements, roles and responsibilities, job descriptions, and compliance requirements. Job hazard analyses, task-to-training matrices, and employee surveys are some of the tools used in determining specific training needs.

INSTRUCTOR/TRAINER QUALIFICATION

Instructors providing training need to be qualified in their area(s) of instruction, based on documented experience, successful completion of a "train-the-trainer" program, and an evaluation of instructional competence. Instructors should maintain professional competency by participating in continuing education or professional development programs or by successfully completing periodic instructor refresher courses and competency reviews.

In the area of emergency response, competent or qualified Fire Service Instructor means an individual has met the requirements identified in the National Fire Protection Association (NFPA) Standard 1041-92: "Fire Service Professional Qualification."

RECIPROCITY

Reciprocity is one organization's acceptance of course work completed for another organization as satisfying its training requirements.

DOE's reciprocity process has two phases. The first phase is reciprocity for courses taken after the publication of this Handbook, and the second phase is reciprocity for courses taken before its publication.

Phase One. All future HAZWOPER training should meet or exceed the learning objectives as established in Appendix 4-A of this chapter. Emergency response training under 29 CFR 1910.120 (q) should meet or exceed the objectives as established in Appendix 4-B and guidelines of this chapter. The certificate should clearly state that the course has met the objectives as stated in the appendix. The training is then acceptable throughout the DOE complex.

Phase Two. Current (i.e., within the past year) 24- or 40-hour core and 8-hour refresher training should be accepted across the DOE complex. If the training is not current (i.e., the training is more than a year old), the employee completes the required 8 hours of refresher training.

- If an employee has not worked at a hazardous waste worksite within the last year, but had completed a 24- or 40-hour core training course before that time, the employee, with the approval of the employer and training provider, has only to complete the required 8-hour refresher course prior to engaging in hazardous waste activities.

- For employees not involved in hazardous waste work for more than 1 year, training beyond that provided in an 8-hour refresher course might be needed. The employer and the training provider should make a determination of training need based upon job hazards and employee roles and responsibilities.

- If an employee has not performed hazardous waste activities and has not received any refresher training in over 3 years, he or she should repeat the appropriate 40 to 24-hour core course.

- A current certificate for a course from DOE-sponsored National Institute of Environmental Health Sciences (NIEHS) grantees should be accepted across the DOE complex as meeting the training requirement.

In all cases the employee receives the appropriate worksite-specific training and any additional OSH training dependent on the specific jobs and tasks that the employee performs, the anticipated hazards, and possible exposures.

EQUIVALENCY

Equivalency is the determination that previous experience, education, or training is equivalent to a given training course. For example, 29 CFR 1910.120 (e)(9) contains a conditional exemption from the 40-hour training requirement for workers who are already experienced in safety and health aspects of hazardous waste worksite work. Each employer should develop an equivalency process which ensures that the necessary knowledge, skills, abilities, and competencies established by the learning objectives of Appendix 4-A of this chapter are met. If an employer believes that an employee has sufficient prior experience to meet some or all of the HAZWOPER training requirements, the employer documents the basis for this belief (see Examples 4-2, 4-3, and 4-4).

Reciprocity and Equivalency

At Oak Ridge, Lockheed Martin Energy Systems (LMES — formerly Martin Marietta Energy Systems) and the International Union of Operating Engineers (IUOE) jointly reviewed previously documented training of LMES employees. The learning objectives of the previous training were compared to the learning objectives of the IUOE 40-hour HAZWOPER course. The LMES and IUOE review concluded that the training equaled 16 hours of the IUOE 40-hour course. An additional 24 hours of HAZWOPER training was given to the LMES employees and they were given a 40-hour certificate. This is an acceptable equivalency methodology and under the reciprocity process described in this chapter the 40-hour certificate is acceptable across the DOE complex.

Example 4-2

The equivalency process can use, but is not limited to, the elements below:

- A review and comparison of previously documented training and experience to determine whether the training meets or exceeds the learning objectives in Appendix 4-A of this chapter. If the learning objectives are met, a training certificate is issued. If partial equivalency is met, the employee receives additional training so that all the learning objectives are met. Once the objectives are met, a certificate indicating completion of classroom training is issued.

- A written and a performance test can be administered that tests the employee's abilities relative to the learning objectives in Appendix 4-A.

- An interview of the employee and previous employers and training providers to determine adequate level of knowledge and experience relative to the learning objectives in Appendix 4-A.

- Previously documented education, experience, and training can be temporarily accepted. The employee's work performance could then be observed. If observation indicates that the employee's previous experience, education, and training are adequate, equivalency is met and a training certificate issued. If observations indicate otherwise, the employee receives additional training (to include the 24- and 40-hour core courses as warranted).

At the Savannah River Site (SRS), the training academy teaches the standard U.S. Environmental Protection Agency's 40-hour hazardous materials (HAZMAT) course, supplemented with worksite-specific hazard training. A new employee at SRS who has recently received the standard EPA 40-hour HAZMAT course would receive equivalency for the general course and be required to take only the worksite- and hazard-specific portion developed by SRS. The EPA 40-hour HAZMAT course and other HAZMAT courses approved by State or Federal agencies would be acceptable at all other DOE sites. In the past, these courses have not been considered equivalent to training given by DOE sites, nor have they been accepted in a reciprocal manner. When a worker moves from worksite to worksite, worksite-specific training is added to the core courses.

Example 4-3

At the Hanford Site, a half-hour satellite course on regulations provided to Westinghouse Hanford Company personnel was considered as equivalent to the regulations component of a standard HAZWOPER course. This decision resulted in a savings of over $350,000 over a 2-year period.

Example 4-4

Once equivalency is established by one DOE contractor, the equivalency is acceptable across the DOE complex. In all cases, the employee receives the appropriate site-specific training and any additional occupational safety and health training, depending on the specific jobs and tasks that the employee performs, the anticipated hazards, and possible exposures.

PROGRAM AND COURSE EVALUATIONS

Training programs and courses should be monitored and revisions made by training or environment, safety, and health professionals as a result of comments provided by students, instructors, and supervisors. Training should also reflect changes in policies, procedures, site characterizations, job requirements, lessons learned, and regulatory requirements. Adjustments are made as a result of analyzing work experiences at similar sites and based on accepted good practices. (See Section 4.5 for a list of reference materials for use in conducting training evaluations.)

SUPERVISED FIELD EXPERIENCE

General site workers who attend the 40-hour course must have a minimum of 3 days of supervised field experience under the direct supervision of a trained, experienced supervisor or team leader prior to being qualified to work unaccompanied at a hazardous waste site. Workers who receive the 24-hour course are required to have 1 day of supervised field experience. If an employee changes tasks and the work is significantly different, all or part of the supervised field experience may need to be repeated, even on the same hazardous waste worksite.

The primary intent of supervised field experience is for employees to be observed by their supervisor or team leader during the course of their workday to ensure they are working in a safe and healthful manner. These 1- or 3-day observation periods allow the supervisor or team leader to observe the worker applying proper techniques, and to emphasize site-specific hazards and special working conditions. The observation period includes some on-the-job training as a reinforcement of previous training received.

Any designated, trained (8-hour HAZWOPER supervisor course as a minimum), and experienced individual responsible for the safety of an employee (such as team leaders or crew leaders) may perform the function of a "supervisor" in providing the "supervised field experience" required by the HAZWOPER Standard.

STUDENT TESTING

Within the DOE complex, proficiency is evaluated and documented by means of written examinations and performance tests. Written examinations and performance tests evaluate knowledge and skills developed during the course of training and are based on specified learning objectives. Achievement is demonstrated by a score of at least 80 percent on the written test and successful completion of the pass/fail performance test. All testing methods are to be designed to measure the student's mastery of the learning objectives, not as a mechanism to prevent employment. Alternative or temporary types of testing (e.g., oral and visual testing, simulation, and team testing) can be used to supplement written examinations and performance tests.

Each DOE and contractor organization should have a program to assist employees who do not pass written examinations or performance tests. Instructors should work individually with students who fail performance tests to correct deficiencies, enabling these students to achieve a competency level sufficient to pass the test.

Oral tests (i.e., those in which written examinations are read out loud) may be administered to individuals who do not possess sufficient reading or writing skills to complete standardized written examinations. However, such individuals should receive supplemental training to enhance reading and writing skills to a level that permits them to read and understand hazard warning signs, use equipment, and so forth.

INSTRUCTOR EVALUATIONS

Instructors are evaluated annually by an appropriate person. These evaluations include observing an instructor's delivery, reviewing those observations with the instructor, and analyzing instructor and class evaluations completed by students during the previous year.

RECORDKEEPING REQUIREMENTS

Each student who satisfactorily completes a training course receives a formal notification that includes the following information: student name, course title, course date, a statement verifying completion of the course, name and address of the training provider, an individual identification number for the training certificate, and a list of the PPE levels (i.e., Level A, B, C, or D) used by the student. Training providers maintain records listing the course dates, names of attendees, names of students who successfully complete each course, course learning objectives or course identifier, and the number of the training certificate issued to each successful student. These records are maintained for a minimum of 5 years and are available to students on request subject to appropriate processing fees. Supervised field experience is documented in a similar fashion.

EMERGENCY RESPONSE TRAINING

The HAZWOPER Standard permits DOE to determine the level of response to an emergency, which can include either handling the entire response in-house or completely evacuating the area and turning responsibility over to one or more outside emergency response organizations. There are five general categories of emergency response personnel who respond to specific types of emergencies:

- Hazardous waste cleanup site workers who respond to emergencies in addition to their normal duties at the site they are assigned to, as specified in 29 CFR 1910.120 (l) and (e).

- TSD facility workers who respond to emergencies in addition to their normal duties at the facility they are assigned to, as specified in 29 CFR 1910.120 (p).

- Onsite collateral-duty emergency responders who respond to limited emergencies on an as -needed basis within a defined work area, as specified in 29 CFR 1910.120 (q).

- Onsite emergency responders who respond to emergencies regardless of type or location on a full-time basis, as specified in 29 CFR 1910.120 (q).

- Offsite emergency responders who respond to emergencies on a full-time basis regardless of type or location of the emergency, as specified in 29 CFR 1910.120 (q). Offsite responders do not fall under the scope of this Handbook.

The latter three categories above include all responders not covered by 29 CFR 1910.120 (l) and (p). The last category includes local firefighters and HAZMAT teams.

Under HAZWOPER, DOE contractor employees working at a hazardous waste cleanup site who also perform emergency response are trained to 29 CFR 1910.120 (e) and (l) criteria. Similarly, employees working at a TSD facility who also perform emergency response are trained to 29 CFR 1910.120 (p) criteria. But if DOE elects to evacuate the employees and designate a full-time, onsite emergency response organization with the responsibility for responding, an emergency action plan (EAP) is developed and the employees are trained in accordance with OSHA's Emergency and Fire Prevention Plan Standard, 29 CFR 1910.38. At a minimum, the onsite emergency response organization is trained in accordance with 29 CFR 1910.120 (q) criteria. DOE may elect to designate an offsite organization (such as a local HAZMAT team) with the responsibility for emergency response. State training requirements and standards such as NFPA 472 may apply in addition to HAZWOPER requirements. Outside emergency responders are not under the scope of this Handbook.

Example 4-5

HAZWOPER establishes five categories of training requirements based on the duties performed by emergency responders (Table 4-4). OSHA determined that job responsibilities define training requirements but that training does not define job responsibilities. Thus, if responders have not been trained in a specific task and informed that they will perform the task during response, they are not permitted to perform the task regardless of their training level.

Cleanup Site and TSD Facility Workers. Hazardous waste cleanup site and TSD facility workers who respond to emergencies in addition to their normal duties at the site to which they are assigned may need worksite-specific emergency response training that supplements the required 24-hour or 40-hour HAZWOPER training. (Refer to Appendix 4-A.) The training is dependent on the worker's roles and responsibilities and the hazards they are likely to encounter. Such training may be outlined in the HASP for special work situations (e.g., confined-space rescue, excavation rescue, elevated-work rescue, and so forth). Hazardous waste workers are required to rehearse the site emergency response plan annually, while TSD facility workers rehearse the response plan regularly.

Five Key Levels of Emergency Response Training. Under HAZWOPER, onsite emergency responders, onsite collateral-duty emergency responders, and offsite emergency responders are trained to one or more of five levels of competency depending on the type of response they perform as specified in 29 CFR 1910.120 (q). Beyond these five key levels, there are two specialized categories of emergency responders: skilled support personnel and specialist employees.

The five levels are:

- First responder awareness level
- First responder operations level
- Hazardous materials technician

Appendix 4-B outlines the learning objectives for the five levels of DOE emergency responders. The objectives and length of training meet HAZWOPER training requirements for emergency response operations.

- Hazardous materials specialist
- On-Scene Incident Commander

Table 4-4. HAZWOPER Categories and Training Requirements for Emergency Responders

Category	Training Criteria	Definition	Initial Training	Refresher Training
Hazardous Waste Cleanup Site Workers Who Respond To Emergencies	29 CFR 1910.120 (e) 29 CFR 1910.120 (l)	Individual working at a hazardous waste cleanup site who responds to emergencies in addition to normally assigned duties.	Appendix 4-A and additional training.	Rehearse emergency plan in annual 8-hour refresher training.
Treatment, Storage, and Disposal (TSD) Facility Workers Who Respond To Emergencies	29 CFR 1910.120 (p)	Individual working in a TSD facility who responds to emergencies in addition to normally assigned duties.	Appendix 4-A and additional training.	Rehearse emergency plan in annual 8-hour refresher training.
Onsite Collateral-Duty Emergency Responder	29 CFR 1910.120 (q)	Individual within a work area who is trained to respond to limited emergencies on an as-needed basis. Not a full-time responder.	Appendix 4-B.	Practice and drills as necessary.
Onsite Emergency Responder	29 CFR 1910.120 (q)	Full-time emergency responder on a DOE site who responds to emergencies at the site.	Appendix 4-B.	Practice and drills as necessary.
Offsite Emergency Responder	29 CFR 1910.120 (q) or State mandate*	Personnel from outside a DOE site who respond to an emergency on the DOE site. Includes local firefighters, HAZMAT teams, and so forth.	State-prescribed training.	Practice and drills as necessary.

* State and local employees are not necessarily covered under the Occupational Safety and Health Act, HAZWOPER, or other OSHA regulations, but are often covered by State safety and health regulations.

Each level is based on the skills needed to perform at that particular level and the hazards likely to be encountered. A detailed description of the levels and suggested learning objectives for each are given in Appendix 4-B. Additional competency criteria and guidelines are provided by 29 CFR 1910.120, Appendix E and NFPA standards. Guidelines to support and assist State, Tribal, and local entities in training emergency response personnel have been developed by the Federal Emergency Management Agency (FEMA) in *Guidelines for Public Sector Hazardous Materials Training*, March 1994.

Onsite Collateral-Duty Emergency Responders. Onsite collateral-duty emergency responders are not trained to be full-time emergency responders. They are assigned to limited emergency response duties within their work area. Duties could include response to controlling or cleaning up spills and releases at a particular area of a TSD facility or cleanup worksite but not duties assigned to a full-time emergency response unit. Collateral-duty responders are required to meet the requirements of 29 CFR 1910.120 (q) as outlined in Appendix 4-B.

Onsite Emergency Responders. Larger DOE sites maintain their own full-time fire departments, emergency response teams, and HAZMAT teams when unique hazards are present. Minimum training requirements are specified in 29 CFR 1910.120 (q) and outlined in Appendix 4-B. Because of the wide variety of hazards that they may encounter, these personnel undergo extensive additional training and drills. Such training often exceeds the minimum required by HAZWOPER and the learning objectives specified in Appendix 4-B.

Offsite Emergency Responders. Offsite emergency responders include local fire departments, emergency response teams, and HAZMAT teams. They are trained to respond to a wide variety of hazardous releases, spills, and other emergencies, and usually receive extensive training and hands-on practice that exceeds HAZWOPER requirements, such as criteria specified in NFPA Standard 472, "Standard for Professional Competence of Responders to Hazardous Materials Incidents" and other State criteria.

Skilled Support Personnel. Skilled support personnel may be needed to assist onsite and offsite emergency response personnel. These individuals are skilled in the operation of certain equipment, such as earth-moving or digging equipment, and are needed temporarily to perform immediate emergency support work. Skilled support personnel are not required to be pre-trained but are provided an initial briefing at the site prior to their participation in an emergency response (see Appendix 4-B).

Specialist Employees. Specialist employees, in the course of their regular jobs, work with and are trained in the hazards of specific hazardous substances and may be called upon to provide specialized technical advice or assistance. Such employees should receive training or demonstrate competency in their area of specialization on an annual basis (see Appendix 4-B).

Refresher Training. Refresher training for emergency responders, as specified in 29 CFR 1910.120 (q), should incorporate lessons learned from the previous year, information about any process or facility changes, emergency response experiences from DOE and the private sector, and detailed review of any incidents that have occurred at the site or facility. Hands-on performance-based training and periodic emergency response drills are recommended. 29 CFR 1910.120, Appendix E, "Training Curriculum Guidelines," provides guidelines.

4.5 REFERENCES

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APPENDIX 4-A
MODEL CONSOLIDATED LEARNING OBJECTIVES

Note: These student learning objectives for the core courses are minimums and are not intended to provide the sum total of required safety and health training to participants. Additional courses are likely to be required for workers at hazardous waste sites, depending on the nature of their work, the hazards they are or may be exposed to, and their roles and responsibilities. Special training may be required for handling shock-sensitive wastes; for shipping and transportation; for laboratory waste-pack handling; and for exposure to radiation hazards. At the end of the core course, the instructor should evaluate the student as to the completion of these objectives. Performance-based evaluation is encouraged. The 40-hour course should include at least one-third of the time in "hands-on" exercises.

40-Hour and 24-Hour Core Hazardous Waste Operations Course Learning Objectives

(1) HAZWOPER elements and safety program (40,24W,24T)

Describe:

- The HAZWOPER Standard (29 CFR 1910.120/1926.65) and the three main applications of the Standard (hazardous waste site, TSD, emergency response).

Identify:

- Applicable paragraphs of 29 CFR 1910.120;
- Primary elements of an employer's effective OSH program; and
- Responsible personnel in TSD operations.

(2) Effects of chemical exposures (40,24W,24T,16)

Describe:

- Sources of chemical hazards;
- Signs and symptoms of exposure to hazardous substances; and
- Various chemicals that may have different effects on the body.

Identify:

- Four routes of entry into the body.

Explain:

- Acute and chronic effects of chemical exposure.

(3) Effects of biological & radiological exposures (40,24T,16)

Describe:

- Biological and radiological hazards;
- Sources of biological and radiological hazards; and
- Probable effects from exposure to biological hazards.

Explain:

- Acute and chronic effects of radiological exposure; and
- Four routes of entry for contaminants into the body.

(4) Fire and explosion hazards (40,24W,24T)

Identify:

- Local fire and explosion hazards; and
- Components of the fire triangle and provide examples of each component.

Define and explain:

- Flashpoint, flammable/combustible limits, chemical incompatibility, and catalyst.

(5) General safety hazards (40,24W,24T,16)

Describe:

- General safety hazards, including noise;
- Construction hazards, where applicable;
- Electrical hazards;
- Powered equipment hazards;
- Walking hazards;
- Heat stress and cold stress hazards; and
- The responsibility of employers and employees to identify and control these general safety hazards.

(6) Confined space, tank, and vault hazards (40,24T,16)

Define:

- A confined space.

Identify:

- Requirements and general precautions for confined space work;
- The primary hazards associated with confined spaces; and
- The ways a confined space presents hazardous occupational conditions.

(7) Persons responsible for site safety and health (40,16)

Describe:

- Positions (or their equivalents) and their alternates who are responsible for safety and health at the site.

(8) (Specific) health and safety hazards
(40,24W,16)

Identify:
- Significant site hazards in the HASP but not covered under General safety hazards, Fire and explosion hazards, Effects of chemical exposures, or Effects of biological and radiological exposure.

(9) PPE program and use of PPE for full protection (40,16)

Identify:
- Elements of a personal protective equipment (PPE) program; and
- Four levels of PPE as prescribed by OSHA.

Explain:
- Selection criteria of PPE and their protective limitations; and
- Methods of inspection, use, maintenance, repair, and storage of PPE.

Demonstrate:
- Correct method for inspecting, maintaining, donning, and removing of an appropriate level of protection, based on a scenario provided by the instructor.

(10) PPE program and use of PPE
(24W,24T)

Identify:
- The elements of PPE program;
- Requirements for the four levels of PPE as prescribed by the OSHA Standard; and
- Three atmospheric hazards requiring respiratory protection.
  (additionally for 24T)
- The selection criteria of chemical protective clothing based on its protective limitations;
- The methods of inspection, use, maintenance and repair, and storage of PPE;
- Atmospheric hazards requiring respiratory protection;
- Approved fit tests for respirator wearers; and
- Limitations of air-purifying respirators (APRs) and their associated cartridges.

(11) Work practices for risk reduction
(40,24W,24T)

Describe:
- Principles of as low as reasonably achievable (ALARA); and
- Work practices used to reduce exposures to hazards, including applicable SOPs relating to operations/construction.

(12) Engineering controls, risk reduction
(40,24W,24T)

Describe:
- The concept of hierarchy of hazard controls;
- Applicable hazard controls and equipment;
- How to determine whether required hazard controls are in use; and
- Relevant new hazard control technology or procedures.

List:
- At least three examples (each) of engineering and administrative controls.

(13) Medical surveillance program
(40,24W,24T)

Describe:
- The basic elements of a medical surveillance program;
- The signs and symptoms of overexposure to hazardous substances;
- Availability of, and a method for, obtaining medical records;
- Rights of employees as patients in terms of confidentiality, access to records, and reporting of examination results; and
- Responsibilities of employees to report incidents, accidents, and illnesses.

(14) Site health and safety plan (HASP)
(40,24W)

Identify:
- Known and potential hazards at worksites.

Describe:
- Key elements of a complete site HASP;
- Methods to contact personnel, and alternates, responsible for site health and safety; and
- The right and responsibility of employees to have access to, and input to change, the site HASP.

Explain:
- Purpose of the site HASP.

(15) Use of monitoring equipment
(40,24W)

Identify:
- Different types of monitoring instruments; and
- General limitations of field-monitoring instruments.

Explain:
- Purposes of monitoring instruments; and
- Factors involved in proper selection and use of monitoring instruments.

Demonstrate:
- Operation of applicable monitoring equipment in accordance with the appropriate procedures and instrument technical manuals.

(16) Site informational program (40,16)

Describe:
- Employer responsibilities to communicate likely exposure(s) to hazards encountered at a waste site; and
- Methods used for that communication.

(17) Drum and container handling/spill containment (40,24T,16)

Identify:
- Potential hazards of drum handling (equipment specifically to be addressed in site-specific training); and
- Safe spill handling practices.

(18) Material handling equipment
(40,24T,16)

Identify:
- Examples of local material handling equipment; and
- Hazards and limitations of specific handling equipment.

(19) Risks from handling radioactive wastes (40,16)

Identify:
- The following for each of the four types of ionizing radiation: physical characteristics, range/shielding, and biological hazard(s);
- The units used to measure radiation and contamination;
- The colors and symbols used on radiological postings, signs, and labels, and;
- The need to notify supervisor if employee does not have specialized radiation training.

Define:
- Ionizing radiation and radioactive contamination.

(20) Handling of shock-sensitive wastes
(40,16)

Describe:
- Situations when shock-sensitive wastes may be encountered and need for special training.

(21) Laboratory waste pack handling procedures (40,16)

Explain:
- Hazards of lab packs.

Describe:
- Situations when lab packs are, or may be, encountered and need for special training.

(22) Container sampling (40,16)

Identify:
- Why an unknown material must be sampled and characterized;
- Steps and precautions when taking samples from drums, tanks, or other containers;
- Hazards associated with obtaining samples from various containers;
- Hazards associated with obtaining samples from bulk containers; and
- Steps and precautions when taking samples from bulk containers.

(23) Procedures for shipping and transport (40,16)

Identify:

- Requirements of labels, markings, and placards.

(24) Decontamination program and procedures (40,24W,24T,16)

Identify:

- Work practices for contamination avoidance;
- Methods of decontamination;
- Primary ways to determine the effectiveness of decontamination;
- Limits to the effectiveness of decontamination; and
- Emergency decontamination procedures.

Demonstrate:

- Student can perform decontamination processes for personnel and equipment.

(25) Emergency response plan and first aid (40,24W,24T)

Explain:

- The purpose for emergency planning;
- Primary elements of an emergency plan;
- Worker responsibilities based on level of training;
- Methods to notify workers of emergency conditions;
- Emergency medical treatment and first aid components of the emergency plan;
- Components of the emergency plan for control and containment of hazardous substance spills; and
- Worker limitations based on level of training.

(26) Safe illumination levels (40,16)

Describe:

- The need for adequate lighting levels for working safely.

(27) Site sanitation procedures and equipment (40,16)

Describe:

- The need for adequate sanitation facilities.

(28) Review HAZWOPER appendixes (40,24T,16)

Identify:

- The applicable appendixes to 29 CFR 1910.120.

(29) Overview of hazard communication standard (40,24T,16)

Explain:

- The OSHA requirements for a hazard communication program.

Demonstrate:

- Given Material Safety Data Sheet (MSDS), identify health hazards information and protective measures.

(30) Use of reference materials (40,24W,24T,16)

Identify:

- Advantages of using reference materials;
- Common sources of reference providing additional health and safety information (can include the National Institute for Occupational Safety and Health (NIOSH) Pocket Guide, DOT Handbook, Emergency Response (ER) Guide, 4-Agency Manual, and CHRIS Manual); and
- Personnel resources who can answer questions and/or issues regarding HAZWOPER.

(31) Toxicology principles and biological monitoring (40,24T,16)

Explain:

- The principles of toxicology and biological monitoring.

(32) Employee rights and responsibilities (40,24T,16)

List:

- The rights and responsibilities given to the employee by the Occupational Safety and Health Act of 1970 as well as DOE policies and the steps necessary to exercise these rights and fulfill these responsibilities;
- Responsibilities of the employer under the Occupational Safety and Health Act of 1970 as well as DOE policies;
- The steps you may take if you believe you have been prevented from exercising your rights under OSHA and DOE policies and procedures; and
- The steps you may take if you believe you have been punished for exercising your rights under OSHA and DOE policies and procedures.

(33) "Hands-on" exercises and student demonstrations (40,24T,16)

Demonstrate:

- PPE usage, especially respirators;
- Drum and container handling;
- Use of monitoring equipment;
- Decontamination procedures;
- Use of hazard communication tools (e.g., labels, MSDSs);
- Actions in an emergency scenario; and
- Use of reference materials.

(34) Employee training program (24T)

Identify:

- Elements of the hazardous waste operations training program; and
- Personnel responsible for the training program.

(35) Site simulations (24W)

Demonstrate:

- Use of hazard communication tools;
- Elementary decontamination; and
- PPE usage.

40 = 40-hour initial hazardous waste operation core training

24W = 24-hour initial hazardous waste operation core training

16 = 16-hours of additional training to supplement 24-hour initial hazardous waste operation core training to equal 40-hour core training

24T = 24-hour initial treatment, storage, and disposal (TSD) core training

8-Hour Refresher – Hazardous Waste Operations Course Learning Objectives

(1) Topics in the 40-hour program including lessons learned

Identify:

- Lessons learned from recent incidents involving hazardous waste operations;
- Methods or work practices used to reduce exposures to hazards;
- Key elements of emergency response plans and procedures; and
- Confined spaces and decontamination practices.

Demonstrate:

- Use of information sources.

(2) Update on the 40-hour course

Identify:

- Recent discoveries regarding effects of exposure to hazardous substances;
- Engineering controls that reduce exposure to hazardous substances; and
- Methods, techniques, and equipment for handling materials.

(3) Pertinent regulations

Identify:

- Recent changes to EPA standards;
- Recent changes to OSHA standards;
- Recent changes to DOE standards; and
- Recent changes to other relevant requirements.

(4) Additional subject areas

Identify:

- New subjects pertaining to hazardous waste operations; and
- Worksite specific standard operating procedures, if readily available.

(5) Personal protective equipment (PPE) and decontamination

Identify:

- Use of PPE; and
- Equipment and procedures for decontamination operations.

Demonstrate or Review (or Both):

- The methods for selecting, inspecting, donning, and removing PPE, based on a scenario provided by the instructor. This shall be accomplished such that the required level of protection is achieved and there is no spread of hazardous material to any undesired location.

Note: Employers at TSD facilities need to ensure that 8-hour refresher training addresses the hazards of the particular TSD site. Therefore, the learning objectives for TSD sites may differ from those stated above.

8-Hour Supervisor/Management – Hazardous Waste Operations Course Learning Objectives

(1) Demonstrate working knowledge of:

- Employees Safety and Health Program including Construction;
- Hazardous waste and material training requirements;
- Employer's Personal Protective Equipment Program;
- Employer's spill containment program;
- Employer's Decontamination Program; and
- Employer's health hazard monitoring procedures and techniques.

(2) Demonstrate the ability to apply and interpret:

- A HASP; and
- Levels of protection (based on changing hazards).

(3) Recognize legal liabilities and accountabilities.

Identify techniques for effective:

- Worker qualifications;
- Site control; and
- Supervised field experience.

(4) Demonstrate working knowledge and management of hazardous wastes and their disposal.

- Applicable regulations and procedures;
- Training requirements PPE;
- Methods, techniques, and requirements for segregation, labeling, storing, and transportation of hazardous substances; and
- Decontamination.

(5) Demonstrate working knowledge of required notifications in the event of a hazardous substance release:

- To company officials;
- Local authorities;
- State authorities; and
- Federal authorities.

(6) Demonstrate working knowledge of emergency program and procedures applicable to the job function:

- Communications;
- Mitigation procedures;
- Procedures to protect personnel;
- Procedures for decontaminating; and
- Procedures for area restoration.

Recognize lessons learned from recent incidents and case studies applicable to hazardous waste operations.

APPENDIX 4-B
MODEL LEARNING OBJECTIVES FOR HAZWOPER EMERGENCY RESPONSE

FIRST RESPONDER AWARENESS LEVEL

The minimum training time for the awareness level responder is dependent on the time needed to recognize the emergency, initiate the required notifications, and establish initial site security control. 1910.120 (q)(6)(I) defines first responders as individuals who are likely to witness or discover a hazardous waste or substance release and who have been trained to initiate an emergency response sequence by notifying the proper authorities of the release. They would take no further action beyond notifying the authorities of the release.

(1) Hazards and associated risks

Define and List:

- Known hazardous substances and risks.

Describe:

- Potential hazardous substance release scenarios; and
- Process for hazardous substance recognition and assessment.

(2) Emergency response

Explain:

- Emergency recognition;
- Process for site security and control during a hazardous substance release;
- Evacuation routes and procedures;
- Emergency alerting and response procedures; and
- Safe distances and place of refuge.

FIRST RESPONDER OPERATIONS LEVEL

The minimum time requirement for training for operations level is 8 hours. Additional specialized training may be required (e.g., confined space entry, excavation rescue, and other local, State, or Tribal requirements). 1910.120 (q)(6)(ii) defines first responder operations level as individuals who respond to releases or potential releases of a hazardous waste or substance as part of the initial response to the site for the purpose of protecting nearby persons, property, or the environment from the effects of the release. They are trained to respond in a defensive fashion without actually trying to stop the release. Their function is to contain the release from a safe distance, keep it from spreading, and prevent exposures.

Note: Before training at this level begins, the trainee should demonstrate competency in the learning objectives at the first responder awareness level.

(1) Emergency response plan (ERP)

Describe:

- How the first responder awareness level fits into the ERP.

Explain:

- Personnel roles, lines of authority, and communications;
- Emergency medical treatment and first aid;
- Integration of local or State emergency plans with the employer's emergency response plan;
- Elements of emergency response addressed by SARA Title III plans, but not in the employer's response plan;
- How to recognize the need for and procure additional resources; and
- The protocols for initiating emergency rescue and medical response.

(2) Transportation-related emergencies

(Limited to transportation accidents)

Describe:

- How to use the U.S. Department of Transportation's Emergency Response Guidebook;
- How to identify the DOT hazard classes and divisions of hazardous materials;
- Facility and transportation markings and colors that indicate hazardous materials;
- Information available to emergency response personnel shipping labels and documents; and
- The significance of the terms Type A, Type B, and special forms as they relate to hazardous materials packaging.

List:

- Common examples of materials in each hazard class or division.

(3) Hazard and risk assessment

List:

- Methods to complete basic hazard and risk assessment for each known hazardous substance.

Explain:
- Basic hazardous materials terminology;
- Material behavior characteristics;
- Outside sources of information on hazards and risk assessment (e.g., MSDSs, CHEMTREC, National Response Center); and
- Protocols for defensive actions and evacuation.

(4) Personal protective equipment (PPE)
List:
- Available PPE at the applicable facility**.**

Describe:
- How to properly select appropriate PPE; and
- How to properly don and doff appropriate PPE for the hazardous material response scenarios identified for the applicable facility.

(5) Defensive control techniques
List:
- Available defensive actions.

Explain:
- How to perform the various basic (defensive) control, containment, or confinement operations or all three.

Describe:
- Safety precautions to be observed when conducting defensive operations during approach or work in the endangered area or both;
- Methods to monitor and evaluate health and safety issues involving response personnel; and
- Communication methods for keeping the incident command structure apprised of actions being taken by personnel in the endangered area.

Decontamination
List:
- The types and location of equipment used during basic decontamination activities**.**

Explain:
- How to implement basic decontamination procedures.

Describe:
- Protocols for various methods of basic personnel decontamination and how medical considerations may impact those protocols.

(7) Operating procedures
List:
- Applicable standard operating procedures.

Explain:
- How standard operating procedures are initiated and used during an emergency response;
- How to implement termination procedures; and
- The role of the operations level during hazardous materials incidents as specified in the applicable emergency response plan.

HAZARDOUS MATERIALS TECHNICIAN

The minimum time requirement of training for technician level is 24 hours, equal to the first responder operations level and in addition the time required to provide the student with the competency in the objectives listed above. The employer certifies these competencies. 1910.120 (q)(6)(iii) defines hazardous materials technicians as individuals who respond to releases or potential releases for the purpose of stopping the release. They assume a more aggressive role than a first responder at the operations level in that they will approach the point of release in order to plug, patch, or otherwise stop the release of a hazardous substance.

Note: Before training at this level begins, the trainee should demonstrate competency in the learning objectives at the first responder operations level.

(1) Operating Procedures
Describe:
- How to implement the employer's emergency response plan;
- The role of the Hazardous Materials Technician; and
- How to function within an assigned role within the Incident Command System.

(2) Hazard and risk assessment
Explain:
- Advanced methods to complete hazard and risk assessments;
- How to classify, identify, and verify materials by using field survey instruments and equipment;
- Basic chemical and toxicological terminology and behavior;
- The use and limitations of applicable monitoring equipment (e.g., CO Meter, Colorimetric tubes); and
- Methods of identifying, establishing, and maintaining positive controls over the endangered and surrounding areas (e.g., hot, warm, and cold zones).

(3) Personal protective equipment
List:
- Available specialized chemical PPE.

Describe:
- How to properly select appropriate specialized chemical PPE;
- Protocol for downgrading PPE requirements based on monitoring results; and

- How to properly don and doff appropriate specialized chemical PPE.

(4) Control techniques

Explain:

- How to perform various advanced (offensive) control, containment, or confinement operations, or all three, within the capabilities of available resources and PPE.

Describe:

- Safety precautions to be observed when conducting defensive/offensive operations in the endangered area.

(5) Decontamination

List:

- All the available types and locations of decontamination equipment**.**

Describe:

- How to implement various decontamination procedures and the procedures to be used for different hazardous substances.

Explain:

- Protocols for methods of personnel decontamination and how medical considerations may impact those protocols.

(6) HAZARDOUS MATERIALS SPECIALIST

The minimum time requirement for training the hazardous materials specialist is 24 hours, equal to the technician level, plus the time needed to provide the student with competency in the objectives above. The employee certifies these competencies. Additional specialized training may be required (e.g., confined-space entry, excavation rescue, and other local, State, or Tribal requirements). 1910.120 (q)(6)(iv) defines hazardous materials specialists as individuals who respond with and provide support to hazardous materials technicians; however, those duties require a more directed or specific knowledge of the various substances. The hazardous materials specialist would also act as the site liaison with Federal, State, local, and other government authorities in regard to site activities.

Note: Before training at this level begins, the trainee should demonstrate competency in the learning objectives at the hazardous materials technician level.

(1) Operations procedures

Describe:

- How to implement the local ERP;
- The basics of the State emergency response plan; and
- The role of the hazardous materials specialist during hazardous materials incidents as specified in the applicable emergency response plan.

(2) Hazard and risk assessment

Explain:

- Aspects involved in completing in-depth hazard and risk assessment for each hazardous substance that could be potentially encountered;
- How to classify, identify, and verify known and unknown materials by using advanced survey instruments and equipment; and
- Demonstrate an understanding of chemical, radiological, and toxicological terminology and behavior.

(3) Personal protective equipment

List:

- Available specialized chemical PPE.

Describe:

- How to properly select appropriate specialized chemical PPE.

(4) Defensive control techniques

Explain:

- How to perform specialized control, containment, or confinement operations, or all three, within the capabilities of the available resources and PPE.

(5) Site safety and control plan

List:

- The topics to be covered in a site safety and control plan.

Describe:

- How the site safety and control plan is used to ensure worker health and safety at the event scene.

ON-SCENE INCIDENT COMMANDER

The minimum time requirement for training the on-scene incident commander is 24 hours. Additional specialized training may be required (e.g., other local, State, or Tribal requirements). 1910.120 (q)(6)(v) defines the on-scene incident commander as an individual who will assume control of the incident scene beyond the first responder awareness level. Note: Before training at this level begins, the trainee should demonstrate competency in the learning objectives at the first responder operations level.

(1) Operations procedures

Describe:

- How to implement the employer's emergency response plan;
- How to implement the employer's incident command system;
- How to implement the local emergency response plan;
- The basics of the State emergency response plan;
- The basics of the roles and responsibilities of the Federal Regional Response Team;
- The role of the on-scene incident commander;
- The process for limiting personnel access into the endangered area;
- Methods for implementing protective actions for personnel located within and outside the endangered area;
- The process for identifying and approving applicable PPE;
- How various emergency response organizations, on and off the event site, are integrated into a single incident command system; and
- The process for developing, approving, and releasing public information to offsite entities.

Explain:

- The emergency response organizational structure;
- The roles and responsibilities of offsite emergency response organizations as that response relates to the incident command system;
- Other resources that may be needed during a hazardous materials incident;
- The method for evaluating the progress of the planned response to ensure the response objectives are being met safely, effectively, and efficiently;
- Steps required to terminate the emergency phase of a hazardous materials incident;
- The procedure for conducting incident debriefings at a hazardous materials incident;
- The process for maintaining event logs and documentation developed during the hazardous waste incident; and
- The procedure for conducting an incident critique at the conclusion of the hazardous materials incident.

(2) Personal protective equipment

Explain:

- The hazards and risks associated with employees working in chemical PPE.

(3) Decontamination

Describe:

- The importance of decontamination procedures.

SKILLED SUPPORT PERSONNEL

There is no minimum training time for skilled support personnel. The training should be based on the responder being able to perform the required emergency actions in a safe and healthful manner. While individuals normally filling this type of position are not necessarily the employer's own employees, all personnel expected to respond during an emergency should receive the necessary level of training equal to their anticipated level of response. Skilled worker training consists of briefing and is normally provided at the event scene. 1910.120 (q)(4) defines skilled support personnel as individuals, not necessarily an employer's own employees, who are skilled in the operation of certain equipment, such as mechanized earth-moving or digging equipment or crane and hoisting equipment, and who are needed temporarily to perform immediate emergency support work that cannot reasonably be performed in a timely fashion by an employer's own employees, and who will be or may be exposed to the hazards at an emergency response scene. These individuals, while not required to be pre-trained prior to initiating an emergency response, must be provided an initial briefing at the site prior to their participation in any emergency response. This initial briefing should meet the following learning objectives:

- Demonstrate the ability to properly wear appropriate PPE.
- Describe the chemical hazards involved with the tasks to be performed.
- Describe the duties to be performed.
- Describe the safety and health precautions needed to ensure health and safety of the individual.

SPECIALIST EMPLOYEES

There is no minimum training time for the specialist employee. The training should be focused toward the need for the individual to be able to effectively interface and coordinate with the on-scene incident commander in providing technical expertise and advice. 1910.120 (q)(5) defines specialist employees as individuals, who in the course of their regular job duties, work with and are trained in hazards of specific hazardous wastes or substances, and who will be called upon to provide technical advice or assistance at a hazardous substance release incident to the individual in charge. These employees must receive training or demonstrate competency in the area of their specialization annually and should be trained to meet the following training objectives:

(1) Assistance to the On-Scene Incident Commander

Explain:

- The responsibilities for assisting the on-scene incident commander in planning, implementing, and evaluating responses to hazardous incidents involving their area of expertise.

Describe:

- The types of resources and information that may be required to support the on-scene incident commander in areas of their specific expertise.

(2) Operation procedures

Explain:

- The various support roles a specialist employee may be expected to provide (e.g., hazardous materials, packaging, safety, medical).

APPENDIX 4-C
SUMMARY OF TRAINING REQUIREMENTS FOR EMERGENCY RESPONSE PERSONNEL

Job Title	Definition	Training Requirements
Skilled Support Personnel	• Expert in the operation of equipment, not necessarily employees of the employer, and may perform temporary emergency work • Examples: crane or earth-moving equipment operators, or medical personnel whose typical duties do not include treating contaminated patients	• Must receive initial briefing at the site prior to participation in emergency response as required by 29 CFR 1910.120 (q)(4) • Demonstrated competencies listed in 29 CFR 1910.120, Appendix E
Specialist Employees	• Employees outside immediate release area who assist on-scene incident commander • All activities coordinated through individual in charge of the incident command system • Examples: industrial hygienists or health physicists providing guidance on PPE selection	• Must meet requirements of 29 CFR 1910.120 (q)(5) • Demonstrated competencies listed in NFPA Standard 472—1992 for specialist categories C, B and A
First Responder Awareness Level	• Individuals likely to witness or discover a release and who are trained to initiate emergency response sequence • Example: security personnel	• Must meet requirements of 29 CFR 1910.120 (q)(6)(i) • Demonstrated competencies listed in 29 CFR 1910.120, Appendix E
First Responder Operations Level	• Individuals who respond to releases in a defensive fashion and confine it from a distance • Example: firefighters, since they will respond to releases; and process operators, since they may take defensive actions from a safe distance	• A minimum of 8 hours of training or sufficient experience to demonstrate competency in areas listed in 29 CFR 1910.120 (q)(6)(ii)[1] • Demonstrated competencies listed in 29 CFR 1910.120, Appendix E
HAZMAT Technician	• Responds to releases for purposes of stopping release • Process operators may take limited action in danger area if they: (1) have informed the incident command structure of the emergency, (2) have adequate PPE, (3) have adequate training in procedures they are to perform, and (4) employ the buddy system	• At least 24 hours of training equal to the first responder operations level and additional competency in areas listed in 29 CFR 1910.120 (q)(6)(iii)[2] • Demonstrated competencies listed in 29 CFR 1910.120, Appendix E
HAZMAT Specialist	• Duties parallel HAZMAT Technician • Requires knowledge of substances to be contained	• Includes demonstrations and hands-on performance and proficiency • At least 24 hours of training equal to the HAZMAT technician level and additional competency in areas listed in 29 CFR 1910.120 (q)(6)(iv)[2]
On-Scene Incident Commander	• Oversees HAZMAT team and is knowledgeable in command and management • Does not necessarily have extensive knowledge of certain technical aspects	• A minimum of 24 hours of training equal to the first responder operations level and additional competency in areas listed in 29 CFR 1910.120 (q)(6)(v) • Demonstrate competencies listed in 29 CFR 1910.120, Appendix E

[1] California State Fire Marshal's Office and other States require 16 hours of training.

[2] The California Office of Emergency Services requires 160 and 240 hours of training for HAZMAT Technician and Specialists, respectively, for State certification. However, State certification for HAZMAT Technicians and Specialists is not required.

Note: It is important to determine State and local requirements in your jurisdiction.